Ordering number : ENN8099A

SANYO Semiconductors
DATA SHEET

P-Channel Silicon MOSFET

SCH1301 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.8V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−12	V
Gate-to-Source Voltage	V_{GSS}		±8	V
Drain Current (DC)	I_D		−2.4	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−9.6	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (900mm²×0.8mm)	0.8	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−12			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−4V, V_{GS}=0V			−1	μA
		V_{DS}=−12V, V_{GS}=0V			−10	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±6.4V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−6V, I_D=−1mA	−0.3		−1.0	V
Forward Transfer Admittance	|yfs|	V_{DS}=−6V, I_D=−1.3A	2.52	4.2		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=−1.3A, V_{GS}=−4.5V		90	120	mΩ
	R_{DS}(on)2	I_D=−0.7A, V_{GS}=−2.5V		125	175	mΩ
	R_{DS}(on)3	I_D=−0.3A, V_{GS}=−1.8V		165	280	mΩ
	R_{DS}(on)4	I_D=−0.1A, V_{GS}=−1.5V		330	580	mΩ
Input Capacitance	Ciss	V_{DS}=−6V, f=1MHz		450		pF
Output Capacitance	Coss	V_{DS}=−6V, f=1MHz		100		pF
Reverse Transfer Capacitance	Crss	V_{DS}=−6V, f=1MHz		85		pF

Marking : JA

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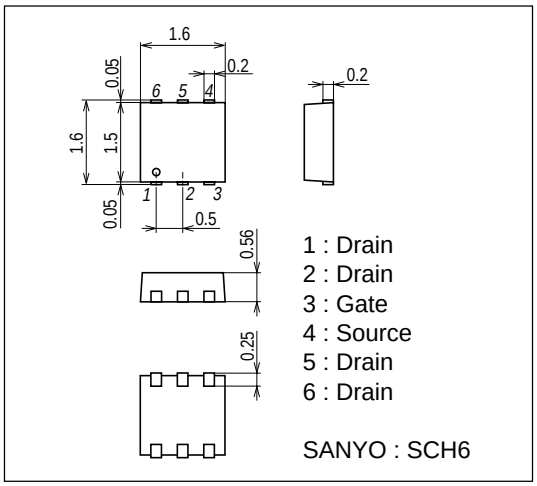
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		15		ns
Rise Time	t_r	See specified Test Circuit.		70		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		65		ns
Fall Time	t_f	See specified Test Circuit.		50		ns
Total Gate Charge	Qg	V_{DS}=–6V, V_{GS}=–4.5V, I_D=–2.6A		6.5		nC
Gate-to-Source Charge	Qgs	V_{DS}=–6V, V_{GS}=–4.5V, I_D=–2.6A		0.8		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=–6V, V_{GS}=–4.5V, I_D=–2.6A		2.0		nC
Diode Forward Voltage	V_{SD}	I_S=–2.6A, V_{GS}=0V		–0.87	–1.5	V

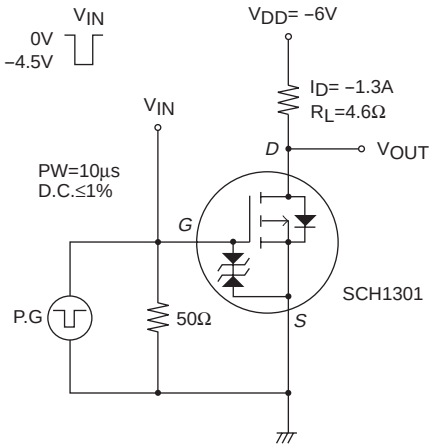
Package Dimensions

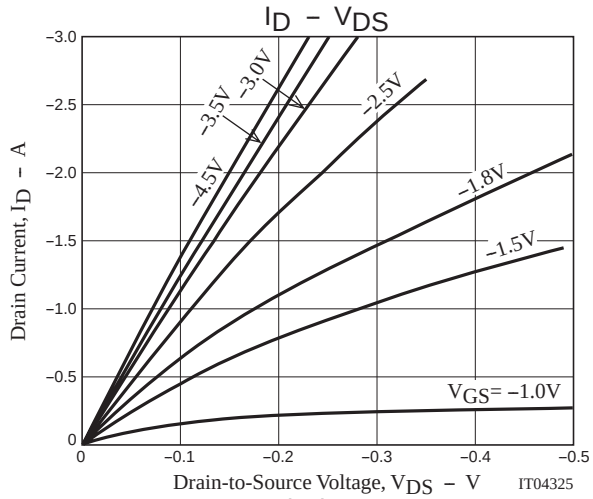
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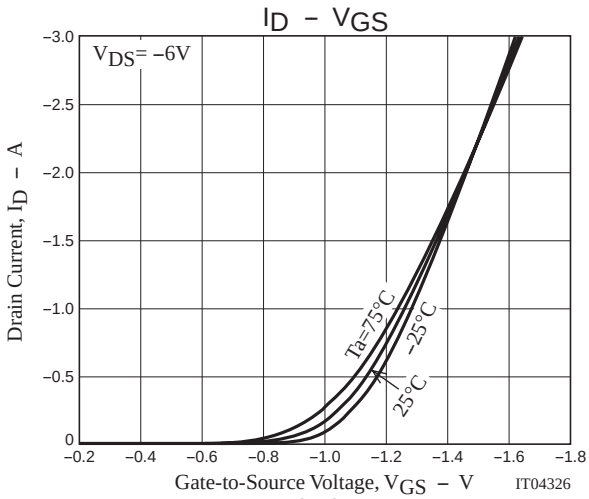
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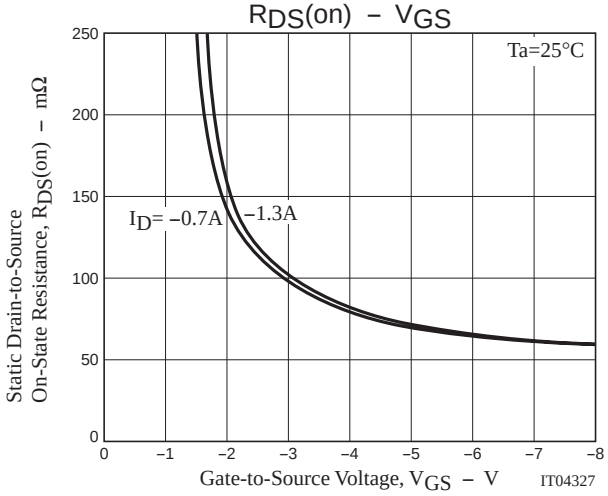


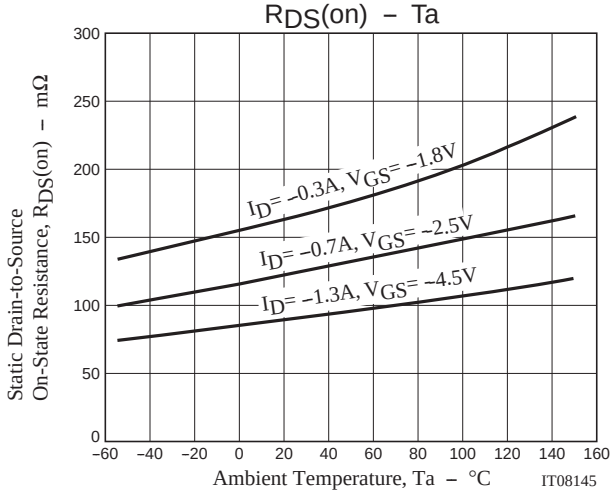
Switching Time Test Circuit



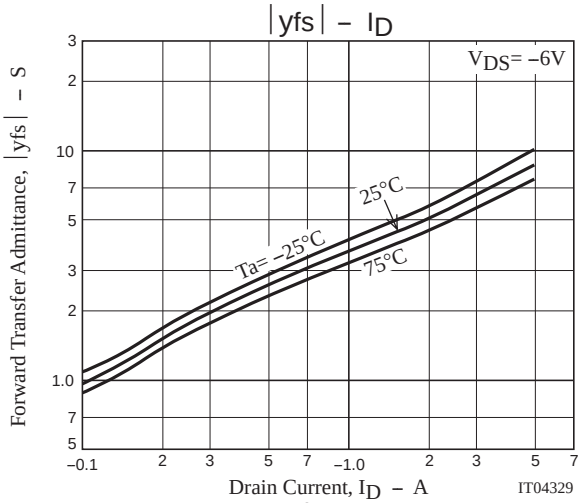


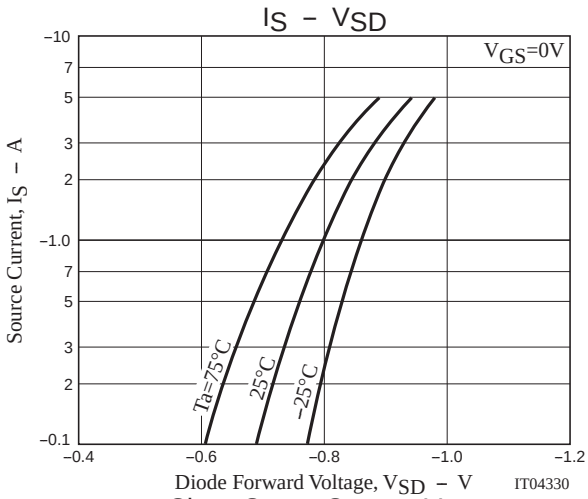


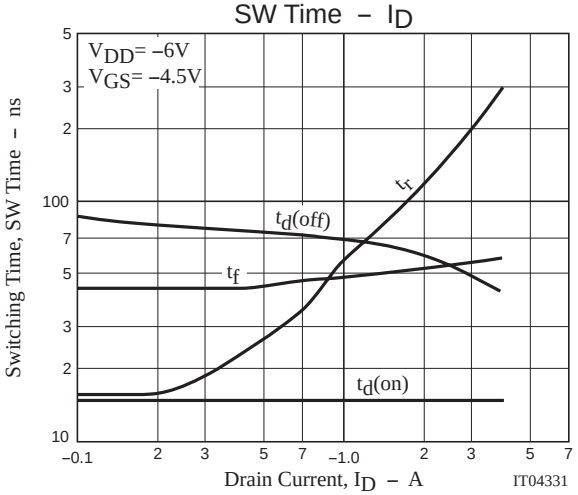


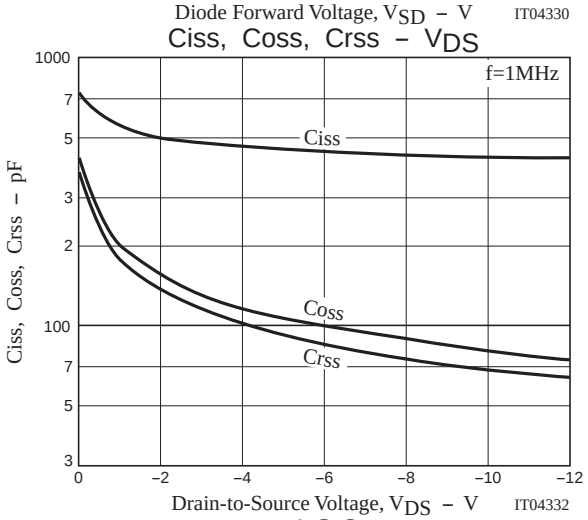


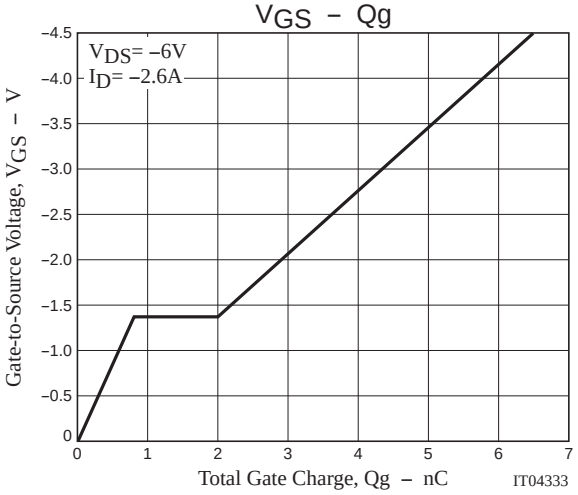
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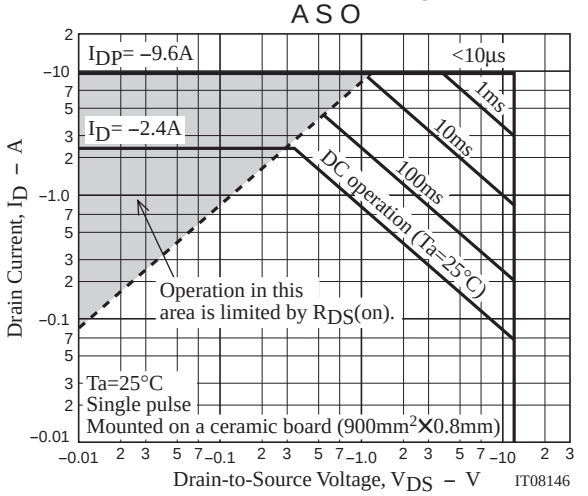


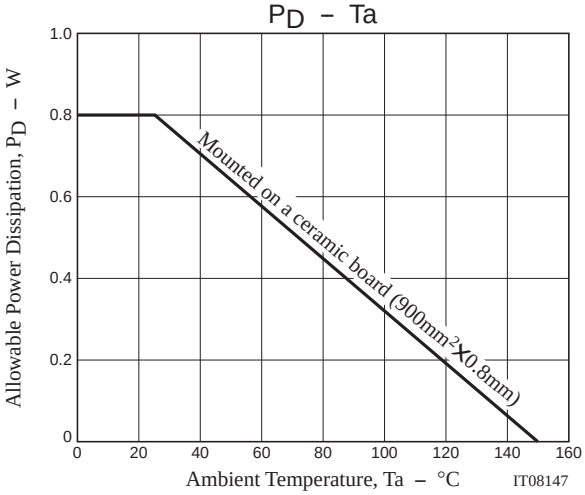












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Note on usage : Since the SCH1301 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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